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Understanding the Meaning of Concepts Across Domains Through Collocation Analysis: An Application to the Study of Red Tape

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Abstract

Public administration scholarship is facing a crisis of legitimacy, as academic research is viewed as both increasingly irrelevant for practice and methodologically underdeveloped. In this study, we put forward a so-called collocation analysis approach, which is a useful tool for studying the meaning of key concepts in public administration and (re)focusing academic research agendas to salient societal problems by identifying how concepts are talked about in different domains. To illustrate our approach, we assess the meaning of red tape in academia, policy-making, and the media. Our dataset consists of 255 academic articles, 2,179 US Congressional Records, and 37,207 US newspaper articles mentioning red tape. We find that red tape has specific connotations in each domain, which limits the extent to which these domains are being bridged. Using the insights from our analysis, we develop a red tape research agenda that aims for more relevant and rigorous knowledge generation and conclude by setting out implications and ways forward for public administration research at large.

Introduction

Progress has been made in developing the "science" of public administration over the past century (Meier 2015; Wright 2015), but critics also point out that the field is increasingly facing a crisis of legitimacy (e.g., Pollitt 2017; Zhu, Witko, and Meier 2019). Some observers note that this legitimacy crisis is caused by theoretical over-specialization (Raadschelders and Lee 2011), and public administration's increased focus on answering "narrow questions" (Zhu, Witko, and Meier 2019, 287) rather than addressing the "big problems of governance" (Roberts 2018, 73). Other critics mainly worry that the field's underdeveloped research methods undercut the credibility of research findings (Gill and Meier 2000; Grimmelikhuijsen et al. 2017).

Recently, methodological pluralism has been advocated as a means to address concerns about both the relevance and credibility of public administration research (Hollibaugh 2019; Schwartz-Shea 2019; Zhu, Witko, and Meier 2019). In this study, we answer this call for methodological pluralism by introducing a collocation analysis approach (e.g., Pollach 2014), which enables scholars to reflect on how central concepts in the field are differentially discussed across domains—with our application focusing on comparing scientific and nonscientific discourse.

Although recent work applying methods such as topic modeling (e.g., Walker et al. 2019) has inductively identified differences in the topics discussed by scholars and practitioners, collocation analysis helps generate unique insights by starting from a predefined concept and, in turn, investigating how the fundamental focus and meaning of this concept differs across domains. This is accomplished by honing in on the immediate context of focal concepts in written documents, and identifying which terms are uniquely used

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in conjunction with these focal concepts within and across different text datasets. In so doing, it offers a systematic, replicable, yet inductive and data-informed approach to investigating differences in discourse around important public administration concepts. In turn, it enables researchers to reflect upon the ways in which important stakeholders outside the academic sphere talk about public administration concepts and assess to what extent academic discourse corresponds to these views.

We illustrate the potential of this approach in the context of red tape, which is one of public administration's defining topics (Bozeman and Feeney 2011; Pandey and Scott 2002). Specifically, we compare the meaning of red tape in three different domains, namely academia, policy-making, and the media, by analyzing a dataset consisting of 255 academic papers, 2,179 US Congressional Records, and 37,207 US newspaper articles mentioning red tape. The findings from our analysis are used to outline a red tape research agenda that brings together salient elements from all three domains, and takes into account the relevance and credibility challenges facing public administration scholars.

The contribution of this study is two-fold. First, we introduce and apply collocation analysis as a promising new addition to the public administration toolbox. Collocation analysis enables scholars to analyze large sets of written documents in a systematic, replicable, and transparent way across contexts. This approach is in line with principles of good research (e.g., Zhu, Witko, and Meier 2019). Second, we show how collocation analysis can improve the relevance of public administration research by identifying ways in which future research may adjust its foci around specific concepts to bring it closer to the experienced reality of stakeholders in nonscientific domains.

The structure of this article is as follows. First, we discuss the legitimacy crisis public administration currently faces, and continue by introducing the collocation analysis approach as a specific tool to address some of the central issues in this crisis. We then apply this approach to the context of red tape and conclude with a red tape research agenda that illustrates how collocation analysis can help identify avenues for future research that connects conversations both within public administration scholarship, and between scholars and other stakeholders.

Public Administration Scholarship in Crisis

Improving scientific quality, while simultaneously keeping a watchful eye on the practical implications of academic research, has been a concern for public administration scholars for almost a century now (Argyris 1991; Meier 2015). Yet, critics warn that public administration research is becoming increasingly irrelevant to practice, and more attention should be paid to doing rigorous research that can meaningfully impact on society (Bushouse et al. 2011; Zhu, Witko, and Meier 2019). For example, Del Rosso (2015, 130) argues that "[s]cholars interested in having influence beyond the ivory tower need to combine their pursuit of disciplinary requirements with efforts to make their work more intelligible and accessible to a broader audience." Similarly, Nisar (2020) points out that public administration scholars interested in improving bureaucracy need to consider taking a citizen perspective, rather than adhere to a singular practitioner focus.

Public administration's lack of relevance is caused in part by specialization in the field (Moynihan 2017), which has resulted in the development of theoretical subfields that do not sufficiently take into account real-life implementation issues and organizational processes (Raadschelders and Lee 2011). Some scholars take a somewhat different perspective and argue that public administration is becoming increasingly irrelevant because of a focus on "narrow questions" (Zhu, Witko, and Meier 2019, 287), rather than the "big problems of governance" (Roberts 2018, 73). According to these critics, important societal topics such as climate change and technological change do not receive enough attention from academia (e.g., Fiorino 2010; Pollitt 2017).

A persistent lack of attention to social and cultural context has also contributed to the field's lack of relevance (e.g., Wright 2015). Decades ago, Dahl (1947) pointed out that principles of public administration that are considered successful in one nation-state cannot easily be transposed to other nation-states due to differences in social, economic, and political environments. More recently, scholars have similarly questioned the validity of a one-size-fits-all approach to good governance (e.g., Andrews 2010). Yet, most public administration studies are still conducted in the United States or United Kingdom (O'Toole and Meier 2015). Problematically, research findings and policy implications from this Anglo-Saxon setting may not translate well to other contexts.

The irrelevance of public administration research can also be attributed to an ecological logic. Much like organizations (Hannan and Freeman 1977) or written rules (Kaufmann and van Witteloostuijn 2012; March, Schulz, and Zhou 2000), a stream of academic literature is a (sub)population of social entities. The growth of such populations is affected in part by endogenous forces. For example, van Witteloostuijn and de Jong (2010, 194) argue that in the context of regulation "new rules try to solve voiced problems but often introduce new issues. Therefore, new rules induce the need for yet another set of new rules." This process of endogenous growth, which is known in ecological terms as a density-dependent growth process, likely also plays part in the development of academic (sub) fields. Indeed, avenues for future research outlined in academic articles do not only aim to inspire more relevant knowledge for practice, but also serve as a vehicle for legitimating the academic field to which the research belongs. Put differently, academic relevance is often considered more important than practical relevance.

Public administration is also plagued by a lack of methodological rigor that undercuts the credibility of research findings (Grimmelikhuijsen et al. 2017; Zhu, Witko, and Meier 2019). Concerns about underdeveloped research methods in public administration are nothing new (Dahl 1947; Gill and Meier 2000). For example, Perry and Kraemer (1986) reviewed the methodologies used in public administration articles published during the period 1975–1984 and concluded that the literature during that time was still mostly applied, noncumulative and lacking institutional support. Stallings and Ferris (1988) reached similar conclusions using an extended dataset of publications from 1940 through 1984.

The recent emergence of behavioral public administration (e.g., Grimmelikhuijsen et al. 2017) has reinvigorated existing methodological debates. Behavioral public administration uses “insights from behavioural sciences to inform research on individuals and groups in public administration settings” (James, Jilke, and van Ryzin 2017, 865), and—for the most part—advocates the use of experiments as the preferred research method for conducting public administration research.

Experimental research designs are better able to identify causality and have stronger internal validity than traditional public administration methods such as surveys and interviews (Brewer and Brewer 2011). At the same time, experiments are often artificial and stylized. This lack of external validity is particularly problematic for a field like public administration that aims to make meaningful contributions to practice, as set out above. As a result, scholars are becoming aware that studies should also be replicable in different contexts (Walker et al. 2019).

In sum, public administration scholars are facing at least two broad challenges. On the one hand, research is becoming increasingly irrelevant for practice due to over-specialization, a neglect of the field’s big questions, and an ecological dynamic that favors academic rather than practical impact. On the other hand, public administration remains methodologically underdeveloped, and this limitation is becoming even more salient with the advent of behavioral public administration. If anything, decades of philosophical and methodological debates have taught us that there is no easy solution for improving both the relevance and credibility of public administration scholarship. Instead, various authors have recently argued in favor of methodological pluralism to address the field’s main challenges (Grimmelikhuijsen et al. 2017; Schwartz-Shea 2019).

Methodological pluralism means that public administration scholarship as a whole uses a wide range of qualitative, quantitative, and mixed research methods to address a multitude of research questions. Rather than prescribe a particular research method, methodological pluralism asks that scholars match methods to questions, and pay more attention to improving the quality of research methods overall (Gill and Meier 2000; Zhu, Witko, and Meier 2019). We argue that collocation analysis can help achieve these aims. First, the method itself is a good example of a promising new addition to the public administration research toolbox. Second, the findings from collocation analysis are well-suited as a steppingstone for future research that encompasses a variety of qualitative and quantitative methods. We outline and illustrate how collocation analysis can improve the legitimacy of public administration research in the remainder of this article.

Collocation Analysis to Understand Domain-Specific Meaning

The (digital) availability of rich textual data from various sources combined with developments in computing power have made the study of large collections of text an increasingly important tool for work in the social sciences. Here, we highlight one such tool: collocation analysis (Pollach 2014), which has been developed specifically to identify and compare domain-specific meanings of central concepts by looking at the key words that co-occur with the central concept (so-called “collocations”).

In recent years, scholars in linguistics and the social sciences more generally have subscribed to the notion that the meaning of concepts is context-specific and relational in nature (Carley and Kaufer 1993; Loewenstein et al. 2012). Indeed, the same word often has different meanings based on the context in which it appears (DiMaggio, Nag, and Blei 2013). For example, the word “fly” will have fundamentally different meanings based on whether it is used in conjunction with “spider” versus “airplane.” Existing research shows that collocations can uncover the meaning embedded in words based on those words that they collocate with (Stubbs 2001) and give insights into the otherwise unobserved vocabulary of different stakeholders via their repeated, joint use of specific terms (Mollin 2009). Collocation analysis is the study of these word collocations and aims to reveal meaning that would not be evident from either individual words, nor from manual reading of larger volumes of text (Baker et al. 2008).

Collocation analysis combines elements of quantitative and qualitative research approaches and starts with the identification of the focal concept under investigation—the node. Software then inductively engages in a search for collocates by assessing which words occur within a predetermined word span (e.g., four words to the left and to the right of the node). Next, these collocates are sorted by collocation strength (i.e., how noteworthy a collocation is according to various metrics; discussed below), after which the researcher qualitatively infers the meaning of the most important collocates by returning to the data and being informed by the identified statistical patterns.

Collocation analysis can improve the legitimacy of public administration research in at least three ways. First, collocation analysis allows for direct, statistically informed, and transparent comparison of the domain-specific meanings of focal concepts (Bartsch 2004). The right use of collocation analysis requires a clear description of what written texts are included in the final sample, how these texts are cleaned, and what algorithms are used to analyze these texts. As a result, the transparency and replicability of collocation analysis is high, which is in line with principles of good research (e.g., Zhu, Witko, and Meier 2019) and the open science movement (van Witteloostuijn 2016).

Second, scholars have long argued that public administration would benefit from more comparative research (e.g., Fitzpatrick et al. 2011). In this light, collocation analysis can be used to study the meaning of concepts between different domains in the same country or region, or within the same domain in different countries or regions. This type of comparative research can be applied to both narrow and big questions of governance (Zhu, Witko, and Meier 2019) and addresses persistent concerns about a lack of academic attention to cultural and social context in public administration (Wright 2015).

Third, collocation analysis itself can serve as a steppingstone for outlining research agendas that embrace methodological pluralism. For example, identified differences or patterns in and of themselves do not tell us anything about antecedents or consequences. Instead, researchers could supplement them by introducing case studies using qualitative research methods, such as interviews or focus groups. Furthermore, survey research is well-suited to study associations between different conceptualizations of red tape and organizational performance. Combining these and other methods in a mixed-methods design can improve academic rigor further (Mele and Belardinelli 2019). Generally, the findings from collocation analysis can help identify opportunities for future research that uses a range of qualitative and quantitative methods.

To illustrate how collocation analysis operates and can inform academic public administration research, we apply collocation analysis to the concept of red tape. Red tape is not only an important research topic in public administration (e.g., Bozeman and Feeney 2011; Pandey and Scott 2002), but also a salient issue for policy-makers, businesses, and citizens. Yet, the meaning given to the red tape concept may well differ between domains (e.g., Goodsell 2004). This makes red tape a good candidate for illustrating the collocation analysis approach. We first discuss the specifics of the different data sources used, after which we describe our methodological approach and results. We then outline a multimethod red tape research agenda informed by the findings from our collocation analysis, and end with a broader discussion of how collocation analysis can inform public administration research.

Understanding Red Tape Using a Collocation Analysis Approach

Data Sources

We compare the meaning of red tape across three distinct datasets: US Congressional Records, US newspapers, and academic articles. Data on US Congressional Records was retrieved for the period 1995–2016 from the website congress.gov. The Congressional Record is the official record of the proceedings and debates of the United States Congress, and is published when Congress is in session. By representing the official record of the proceedings, debates, and activities of the US Congress, these texts should offer an in-depth view into the context-specific meaning of red tape in the political sphere. The sampling period was chosen because digitalized and readily accessible texts were only available for these years at the time of sampling.

The Records consist of four sections: the House section, the Senate section, Extensions of Remarks (containing, among others, speeches and tributes), and the Daily Digest (which summarizes the day's floor and committee activities). Records were included when they included the term "red tape" anywhere in their titles or full-texts. We sampled records from all four sections, which yielded 2,179 results. In total, these hearings contained the term "red tape" 3,660 times. Of course, it is worth noting here that Congress represents just one aspect of the political sphere—representing the legislative body of the government. We selected this data source as it offered a systematic, centralized repository of textual data over a long period of time, but acknowledge that other actors such as government agencies (which are also more fragmented in their processes and reporting standards) may play a different role in generating and acting on red tape, and thus in how they discuss this concept.

Newspaper articles were retrieved for the period 1995–2016 (to match the Congressional sample period) from the LexisNexis database. We selected this data source as it captures public discourse and, hence, should provide insights into the meaning of red tape in society. Only newspapers from the United States were selected, and the search term "red tape" was used to identify articles that included the term red tape anywhere in their titles or full-texts. Articles were downloaded for each newspaper and year separately. We focus on the fifty newspapers where the term red tape is mentioned most often. All these newspapers mentioned red tape at least 300 times during our sample period.

In total, 37,207 articles mentioning the term red tape are included in our final sample, which represents roughly 81% of the total number of articles mentioning red tape published in US newspapers in the LexisNexis database at the time of data collection. In total, the term "red tape" was mentioned 40,180 times in our sample articles. Note that LexisNexis does not provide (full) coverage of all major US newspapers. Some newspapers are not included at all, while for other newspapers coverage is limited to the most recent 6 months (e.g., the Los Angeles Times). Despite these limitations, Supplementary Appendix 1-table A1 shows that the final sample captures a wide variety of newspapers.

Academic red tape articles were retrieved from Web of Science for the period 1995–2016. Articles were included in the search if they had "red tape" as topic matter, were published in the English language, and were article-based. An initial search resulted in 548 results. Next, the first author manually verified which articles were concerned with red tape in the public administration sense of the term. Two-hundred thirty-two articles were excluded because the term red tape was used in either a literal sense, or based on an irrelevant contraction of the words red and tape. For the most part, these excluded articles involved empirical studies in biology and health care that use actual tape. An additional 48 articles were excluded because they could not be retrieved online. Finally, 13 articles were excluded because they were published in nonacademic outlets or as book reviews (e.g., Forbes). This approach resulted in 255 journal articles, which mention "red tape" a total of 8,547 times. The top 10 of included academic journals is given in Supplementary Appendix 1-table A2.

Our data for Congressional Records and newspapers come from a single country (the United States), and the majority of existing academic red tape publications is also US-based (see Bozeman and Feeney 2011 for an overview). This means that our sample is heavily biased towards a particular region, and a collocation analysis using samples from different countries or regions could yield insights different from those reported below. Fortunately, one of the strengths of collocation analysis is that it can be replicated in different regional and cultural contexts, as long as the number of documents to analyze is sufficiently representative and researchers have sufficient contextual knowledge of the issue at hand. We reflect on this issue in more detail in our research agenda section.

We cleaned our data following standard approaches for text analysis (Nelson 2020; Schmiedel, Müller, and vom Brocke 2019), removing highly frequent yet meaningless stop words (such as "the," "and," etc.).[1] We also removed references, headers, and footers for the academic articles to prevent over-counting repeated titles and to ensure we isolate only the most meaningful text sections. Supplementary Appendix 2 contains sample code for Python which illustrates the computational process behind these analyses. Specifically, the script parses our cleaned texts and creates a dictionary of all words in the texts for each data source. Per text, it finds all instances of the predetermined node (here: "red tape") and creates a running total of the terms that occur in its direct context. Collocation analyses typically use a word span of three to five words on each side of the node (Bartsch 2004). Because of this, we count the four words occurring to the left and right of the node "red tape" in our texts. Results are robust to using alternative word spans, as reported in Supplementary Appendix 3-tables A3–A5.

To determine the relative importance of the identified collocates, we report four relevant statistics that, jointly, provide a comprehensive overview of collocate strength: the first are the raw frequency counts indicating how often a word is collocated within four words next to red tape. The second are Z scores (Lindquist 2009) that favor high-frequency words with their usual statistical interpretation. These are calculated as $z = \frac{f_{n,c} - p \times f_n}{\sqrt{(p \times f_n) \times (1-p)}}$ where $p = \frac{f_c}{N - f_n}$, $f_{n,c}$ represents the frequency of the collocation between node n and collocate c, f_n the frequency of the node in the corpus, f_c the frequency of the collocate in the corpus, and N the total number of words in the corpus. Here, values larger than 2 are significant at p values of .05 and lower; the higher the scores, the higher the probability that the co-occurrence is not random.

Whereas the Z scores associate higher values to collocates that are high-frequency, the Mutual Information (MI) score (Church et al. 1994) assigns higher scores to rare words that produce unique collocations (though some work has noted that it tends to over-value extremely rare words; e.g., Caldas-Coulthard and Moon

1 We removed numbers, special characters, single letters, and stop words from Python's Natural Language Toolkit.

2010). Higher values indicate that there is less uncertainty about the occurrence of a collocate given the presence of the focal node, with values greater than 3 indicating strong collocates. It is calculated as $\log_2\left(\frac{N\times f_{n,c}}{f_n\times f_c}\right)$.

Fourth, log-likelihood (LL) values strike a balance between frequency and uniqueness and also allow direct, statistical, comparisons between datasets using G-squared statistics (Dunning 1993). Specifically, the G-squared statistic is calculated as follows:

$$G^2_{i,j} = 2\times\left(\begin{array}{c}\left(f_{c1}\times\ln\left(\frac{f_{c1}}{\frac{N_1\times(f_{c1}+f_{c2})}{N_1+N_2}}\right)\right)\\ +\left(f_{c2}\times\ln\left(\frac{f_{c2}}{\frac{N_2\times(f_{c1}+f_{c2})}{N_1+N_2}}\right)\right)\end{array}\right)$$

where f_{c1} and f_{c2} refer to the frequency of collocate c in the full set of collocates within the specified range around the node in corpora 1 and 2, and N_1 and N_2 refer to the total number of collocates in the specified range around the node.[2] The higher this statistic, the more it points toward the collocate being uniquely a collocate in one dataset rather than the other (Rayson and Garside 2000). One key benefit of the G-squared statistic is that it enables a relative comparison of the use of the collocate around the focal node, which we indicate in our tables with a + (relatively higher use compared to the other corpus) or a – (relatively lower use compared to the other corpus). Another key benefit is that testing on the basis of likelihood scores has been shown to be more appropriate for testing with sparse data (as text often tends to be) and it offers a good compromise between the traits of the MI score and Z scores (Dunning 1993).[3] Given that we have three datasets, we report G-squared statistics for each pairwise combination.

For ease of interpretation, we focus below on the 25 most frequent words emerging from the collocation analysis—supplemented by contextual knowledge—when interpreting the results of our collocation analysis results and assess the values of the other indicators of collocate strength to confirm that they meet the various thresholds described above. We chose to report the top 25 collocates as we observe a steep drop in the collocation frequency after the top collocates; wider lists are available upon request but do not substantively alter the qualitative interpretation reported below. For illustrative purposes and to better make sense of the identified patterns, we also provide a number of sample excerpts; additional examples can be found in Supplementary Appendix 4. These excerpts were chosen by isolating the forty terms (including stop words) to the left and right of each node and generating a score capturing how many of these terms were in the corpus' top 25 collocates. We then focused our interpretation on excerpts that were in the top 5th percentile for this score.

Red Tape in Congressional Records

The results of the collocation analysis for Congressional Records are shown in table 1. All collocates in the top 25 in terms of raw frequency also obtain high scores on the Z score and MI score, indicating that these are all truly strong collocates within the corpus.

The most frequent collocate given in table 1 is bureaucratic, and bureaucracy is also included in the top five of collocations. Also having the largest Z-score and MI score in the top 25, these collocations imply that red tape is viewed, first and foremost, as a bureaucratic malady (also evidenced by the term unnecessary, listed at number 13 in the top 25). To illustrate, different members of Congress have argued that "the Federal bureaucracy often chokes small business in red tape" (142 Cong. Rec. S2316, 1996), "the Federal Government has been accused of interfering, creating a bloated bureaucracy, making red tape, unbearable for teachers" (144 Cong. Rec. H8620, 1998), and "while H.R. 1022 purports to ease the sting of federal regulations, I am concerned that the legislation will create too much new federal bureaucracy and red tape" (141 Cong. Rec. H2277, 1995).

Evidently, bureaucracy itself is a broad concept that can refer to organizational structure, government rules, and government size, to mention just a few examples. Our collocation analysis does not capture specific meanings of bureaucracy in the context of red tape, but the frequency of the collocates government, federal, and—to a lesser degree—washington, indicates that government is viewed as the most important source of red tape. More specifically, the collocations regulations, act, bill, and regulatory capture some of the red tape causes as discussed in Congressional Records. For example, a Congresswoman noted that "in order to grow more jobs for the American people, we need to shrink the amount of red tape coming from Washington" (158 Cong. Rec. H5336, 2012), while another member of Congress argued that "we must pass legislation that reduces red tape and repeals burdensome regulations" (157 Cong. Rec. H8037, 2011).

2 An easy way to calculate this statistic is by using the following online tool: http://ucrel.lancs.ac.uk/llwizard.html

3 Although it is possible to compare the frequencies of a given term in the whole corpus, per se, the approach here focuses on the texts around the node to capture only the relevant uses of the collocate (otherwise, the test would simply compare whether the term identified as a collocate occurs more or less in one of the two datasets being compared, without considering whether it was in the direct vicinity of the focal node).

Table 1. Red Tape in Congressional Records

Term	Freq.	*Z*	MI	LL: News	*p*	Rel.	LL: Academia	*p*	Rel.
1. bureaucratic	565	1,083.15	11.02	207.19	<.000	+	570.73	<.000	+
2. cut	437	334.59	8.01	3.10	.078		818.49	<.000	+
3. government	370	129.25	5.56	18.72	<.000	+	269.85	<.000	+
4. federal	331	86.09	4.62	225.79	<.000	+	692.91	<.000	+
5. bureaucracy	294	449.48	9.43	144.87	<.000	+	365.26	<.000	+
6. regulations	271	137.55	6.17	228.82	<.000	+	280.55	<.000	+
7. cutting	218	330.80	8.98	10.64	.001	+	332.77	<.000	+
8. small	199	86.49	5.31	188.13	<.000	+	361.38	<.000	+
9. act	180	36.49	3.23	493.38	<.000	+	374.63	<.000	+
10. bill	178	33.21	3.03	237.72	<.000	+	430.28	<.000	+
11. would	177	35.54	3.19	0.23	.632		84.89	<.000	+
12. get	164	67.20	4.89	2.67	.102		269.86	<.000	+
13. unnecessary	159	237.94	8.48	206.26	<.000	+	259.16	<.000	+
14. regulatory	153	103.08	6.16	128.98	<.000	+	198.83	<.000	+
15. reduction	150	130.32	6.85	370.25	<.000	+	140.24	<.000	+
16. business	142	63.03	4.91	5.83	.016	+	202.57	<.000	+
17. businesses	134	78.59	5.59	14.69	<.000	+	273.20	<.000	+
18. reduce	131	94.49	6.13	44.66	<.000	+	39.38	<.000	+
19. paperwork	128	185.82	8.09	76.36	<.000	+	231.90	<.000	+
20. new	127	33.52	3.43	0.31	.578		77.41	<.000	+
21. need	126	47.29	4.30	40.23	<.000	+	133.66	<.000	+
22. job	119	72.74	5.54	149.32	<.000	+	59.27	<.000	+
23. much	118	63.69	5.19	0.63	.427		41.11	<.000	+
24. process	113	55.38	4.87	9.71	.002	+	107.65	<.000	+
25. washington	111	67.58	5.43	97.85	<.000	+	268.32	<.000	+

Note: "Freq." captures how often terms co-occur with "red tape" rather than pure word counts. "*Z*" contains the *Z* score, with values larger than two being statistically significant by common standards. "MI" contains the Mutual Information score, with values larger than three indicating strong collocates. The "LL" columns contain the G-squared statistic of the comparison of the focal corpus with the listed corpus. "*p*" contains the *p* value associated with the G-squared statistic. "Rel." indicates whether the collocate is used relatively more (+) or less (−) in the focal corpus than the other corpus.

Another theme that emerges from the analysis of Congressional Records is cutting or reducing red tape. Four of the 25 most frequent collocations can be placed in this theme, namely cut, cutting, reduction, and reduce. Hence, in addition to understanding where red tape comes from, Congress is also concerned with finding ways to cut red tape. In this light, it has been argued in Congress that "at a time when job creation remains weak, small businesses should be spending their time and resources creating jobs, not cutting through miles of burdensome IRS red tape" (159 Cong. Rec. S2651, 2013), and "we are cutting through the red tape that has kept far too many new investors just out of reach from a lot of our small businesses" (162 Cong. Rec. H5195, 2016).

A final theme concerns the stakeholders that are affected by red tape. Based on our sample of Congressional Records, these are mostly businesses and business. In particular, the adjective small implies that small businesses are often mentioned in relation to red tape. To illustrate, one Congressman noted that "'[s]ome of the heaviest burdens borne by small business in America are the result of unnecessary federal regulation and red tape.' If my colleagues share that belief—and even if they don't—why would we want to impose further Federal regulations and red tape on small business chapter 11 bankruptcies?" (151 Cong. Rec. S2222, 2005). More recently, a Congresswoman argued that "small businesses do not have the staff or background to identify and comply with ever-growing piles of red tape" (161 Cong. Rec. H768, 2015).

The LL scores imply that most of the red tape collocations found in Congressional Records are used less frequently in both newspapers and academic research. Tentatively, this finding suggests that the red tape dimensions studied in academia do not overlap much with how red tape is conceptualized in Congress. That is, few academic studies have focused on the relationship between different levels of government and red tape, nor on the detrimental effects of red tape on businesses. Similarly, there is a dearth of academic research on how red tape can be cut. We return to this issue below.

Red Tape in Newspaper Articles

The results of the collocation analysis for newspaper articles are given in table 2. Again, all collocates in the top 25 in terms of raw frequency obtain *Z* scores that greatly exceed the common threshold

Table 2. Red Tape in Newspapers

Term	Freq.	*Z*	MI	LL: Congress	*p*	Rel.	LL: Academia	*p*	Rel.
1. cut	5,232	970.84	7.51	3.10	.078		1,710.18	<.000	+
2. said	4,354	171.20	3.14	544.26	<.000	+	1,590.32	<.000	+
3. government	3,178	319.97	5.10	18.72	<.000	–	364.27	<.000	+
4. bureaucratic	3,029	867.95	7.97	207.19	<.000	–	308.36	<.000	+
5. get	2,051	197.72	4.40	2.67	.102		616.86	<.000	+
6. cutting	1,881	640.37	7.79	10.64	.001	–	479.37	<.000	+
7. would	1,871	121.21	3.30	0.23	.632		180.97	<.000	+
8. much	1,397	181.53	4.68	0.63	.427		120.81	<.000	+
9. bureaucracy	1,380	400.52	6.89	144.87	<.000	–	179.06	<.000	+
10. help	1,340	155.08	4.32	11.65	<.000	+	366.09	<.000	+
11. new	1,323	82.10	2.81	0.31	.578		157.72	<.000	+
12. lot	1,313	216.58	5.24	27.82	<.000	+	414.01	<.000	+
13. federal	1,297	143.95	4.17	225.79	<.000	–	396.59	<.000	+
14. business	1,251	126.49	3.89	5.83	.016	–	300.71	<.000	+
15. city	1,175	95.53	3.28	193.68	<.000	+	368.96	<.000	+
16. state	1,170	84.53	3.01	53.09	<.000	+	258.51	<.000	+
17. businesses	1,017	166.66	4.88	14.69	<.000	–	334.92	<.000	+
18. also	983	86.93	3.27	1.43	.232		17.36	<.000	–
19. people	938	69.47	2.82	1.87	.171		180.61	<.000	+
20. one	934	64.01	2.65	0.28	.597		27.49	<.000	–
21. less	924	170.17	5.06	1.43	.232		17.56	<.000	+
22. regulations	920	188.83	5.35	228.82	<.000	–	41.81	<.000	+
23. could	917	87.78	3.37	7.43	.006	+	104.65	<.000	+
24. process	897	146.05	4.69	9.71	.002	–	129.98	<.000	+
25. years	868	68.15	2.86	0.19	.663		202.82	<.000	+

Note: "Freq." captures how often terms co-occur with "red tape" rather than pure word counts. "*Z*" contains the *Z* score, with values larger than two being statistically significant by common standards. "MI" contains the Mutual Information score, with values larger than three indicating strong collocates. The "LL" columns contain the G-squared statistic of the comparison of the focal corpus with the listed corpus. "*p*" contains the *p* value associated with the G-squared statistic. "Rel." indicates whether the collocate is used relatively more (+) or less (–) in the focal corpus than the other corpus.

of two. The MI scores almost all exceed the value of three that is commonly taken as an indicator of a strong collocate, except for "new" (MI score of 2.81), "people" (MI score of 2.82), "one" (MI score of 2.65), and "years" (MI score of 2.86). Given that these are terms with high common use, the MI score seems to not see it as a particularly strong collocate as the terms also co-occur with terms other than red tape. Nevertheless, the values are all relatively close to the threshold and the MI scores are known to greatly overemphasize highly unique terms, such that the top 25 terms as a whole still represent strong and meaningful collocates.

By and large, the results for newspaper articles mirror our earlier analysis of Congressional Records, albeit with some relevant differences. In terms of collocation frequencies, the most salient theme in newspaper articles is cutting red tape (cut, cutting, and down). Business is again mentioned as a relevant stakeholder in the red tape debate. For example, mayor Bloomberg of New York city "promised city agencies would coordinate the permit, license and inspection process for new businesses, cutting the red tape that stymies entrepreneurs" (Daily News New York 2010). Other newspaper articles focus on helping citizens to navigate red tape (people). In this light, a candidate for the Maine State Senate argued that "people often find it difficult to go through the red tape so often found in government to get the help they need. It has been my pleasure to be able to do this. From people needing help with licenses, issues with Department of Human Services, to getting a son or daughter home from overseas. These are just a few of the things I have done to help people" (*Bangor Daily News* 2016).

The relationship between red tape and bureaucracy reemerges as another important theme (bureaucratic, bureaucracy). For example, one journalist states that "doing business with any government agency guarantees an encounter with bureaucracy and red tape capable of sending a rational entrepreneur running in the other direction" (The Salt Lake Tribune 2004). Likewise, a new plan to increase food stamp participation in New York City "would do so mainly by improving outreach, streamlining the application process and cutting through bureaucratic red tape" (Daily News 2006).

Our analysis shows that different levels of government (government, federal, state, city) are mentioned often in newspaper articles. The target audience of newspapers can explain this finding. Whereas Congressional Records mostly focus on the federal level of government, which is arguably their primary concern, newspapers also pay attention to red tape issues at the state and city level that may directly affect their readers. In an article from February 19, 2012, *The Dayton Daily News* asked electoral candidates for the Ohio House of Representatives: "What state government reforms would you support to help businesses cut their costs, red tape and regulations?" Similarly, a mayoral candidate from Indiana suggested "often businesses may get bogged down in the proverbial "red tape" of obtaining permits, etc., in order to operate their businesses. […] by listening to their concerns, city leaders may discover that small modifications to rules or adopting new rules may help streamline the process and foster efficiency" (South Bend Tribune 2003).

The LL scores confirm that some of the collocations in our analysis of newspaper articles are relatively less prevalent compared to our sample of Congressional Records (e.g., bureaucratic, bureaucracy), while other collocations are more prevalent (e.g., state, city). Furthermore, all of the most frequent substantive collocations (ignoring the terms also and one) in newspaper articles are used less often in academic research—again suggesting that the red tape dimensions studied in academia differ from those of interest to other domains.

Red Tape in the Academic Literature

The results of the collocation analysis for the academic literature are given in table 3. As in the other two corpora, the *Z* scores all indicate that the top 25 collocates in terms of raw frequency are strong collocates. The MI scores are all, except for the term "public" (score of 2.72) greater than three as well. Since the included journals are all *public* administration journals, we anticipate that there were many uses of "public" without collocating with red tape, which leads to the MI score slightly under-emphasizing it. Nevertheless, the general patterns again confirm that these top 25 terms are strong collocates.

The high frequency of redtape in table 3 implies that the term red tape, which is condensed into redtape for

Table 3. Red Tape in the Academic Literature

Term	Freq.	*Z*	MI	LL: News	*p*	Rel.	LL: Congress	*p*	Rel.
1. redtape	1,594	180.07	4.51	3,975.21	<.000	+	681.42	<.000	+
2. organizational	752	115.40	4.32	2,562.37	<.000	+	520.60	<.000	+
3. rules	655	120.26	4.61	790.24	<.000	+	148.20	<.000	+
4. perceptions	629	172.72	5.64	2,127.26	<.000	+	446.18	<.000	+
5. level	516	106.64	4.60	1,227.83	<.000	+	256.52	<.000	+
6. levels	499	126.19	5.10	1,370.46	<.000	+	269.22	<.000	+
7. public	489	47.52	2.72	517.71	<.000	+	177.46	<.000	+
8. research	475	81.83	4.02	1,175.47	<.000	+	274.80	<.000	+
9. personnel	422	133.57	5.48	1,186.43	<.000	+	257.02	<.000	+
10. bozeman	407	129.78	5.45	1,412.99	<.000	+	288.70	<.000	+
11. measures	376	99.95	4.85	961.75	<.000	+	219.47	<.000	+
12. formalization	362	117.85	5.35	1,256.76	<.000	+	256.78	<.000	+
13. may	348	54.83	3.42	275.41	<.000	+	162.17	<.000	+
14. measure	344	100.97	5.00	823.54	<.000	+	168.07	<.000	+
15. perceived	309	103.76	5.22	981.26	<.000	+	219.19	<.000	+
16. one	288	48.99	3.38	27.49	<.000	+	12.32	<.000	+
17. model	282	53.67	3.62	776.41	<.000	+	189.17	<.000	+
18. also	281	43.10	3.11	17.36	<.000	+	12.05	<.000	+
19. pandey	279	87.06	4.88	968.61	<.000	+	197.91	<.000	+
20. high	277	68.80	4.27	312.28	<.000	+	101.32	<.000	+
21. higher	276	68.56	4.26	524.96	<.000	+	86.53	<.000	+
22. managers	275	50.19	3.49	730.45	<.000	+	156.99	<.000	+
23. organizations	262	42.04	3.13	513.04	<.000	+	137.87	<.000	+
24. external	241	78.40	4.79	836.68	<.000	+	160.40	<.000	+
25. studies	238	58.26	4.03	582.93	<.000	+	168.82	<.000	+

Note: "Freq." captures how often terms co-occur with "red tape" rather than pure word counts. "*Z*" contains the *Z* score, with values larger than two being statistically significant by common standards. "MI" contains the Mutual Information score, with values larger than three indicating strong collocates. The "LL" columns contain the G-squared statistic of the comparison of the focal corpus with the listed corpus. "*p*" contains the *p* value associated with the G-squared statistic. "Rel." indicates whether the collocate is used relatively more (+) or less (–) in the focal corpus than the other corpus.

analytical purposes, is often mentioned twice within a limited set of words in academic research. This finding can be explained by the fact that academic papers often enumerate different types of red tape shortly after one another. Authors may also end one sentence with the term red tape, and start the next sentence with red tape as well. An additional explanation is that the density of the term red tape is much higher on average in academic research (which focuses on the concept of red tape) than it is in Congressional records or newspaper articles (where red tape is often one of many topics for discussion). Therefore, the high frequency of red tape in academic papers is not surprising, and because the collocation of red tape and redtape is somewhat tautological, we do not reflect on it further.

Some of the other collocations from table 3 reflect topics that are typical of academic literature, but do not have substantive meaning. These collocations include research, measures, measure, model, and studies—suggesting that a major concern in academic literature regards the empirical study and measurement of red tape. We also see that prolific red tape scholars Barry Bozeman (bozeman) and Sanjay Pandey (pandey) are collocated with red tape. Indeed, Bozeman and Pandey have (co)authored many red tape articles (13 and 18 in our final sample, respectively), and their work is highly cited in the red tape literature.

It is also noteworthy that the terms bureaucracy and bureaucratic, which are common collocates for the Congressional and newspaper samples, do not appear in the top 25 of collocates in our academic literature sample. There are at least two explanations for this finding. First, linking red tape to bureaucracy in general may serve the purposes of policy-makers and journalists well, but such broad associations are arguably less suitable for (empirical) academic research. As such, scholars studying different dimensions of bureaucratic structure and functioning may not necessarily refer to these dimensions as bureaucracy (e.g., Kaufmann and Feeney 2012; van Loon et al. 2016). Second, given the negative connotations of the word bureaucracy in society (e.g., Olsen 2006), scholars may be disinclined to mention the term in their research.

A first substantive theme that emerges from the data is that academic research on red tape is mostly concerned with public organizations (organizational, public, organizations). Furthermore, the academic red tape literature has often used public managers as research subjects (managers). This observation is consistent with previous literature (e.g., Bozeman 1993, 2012; Bozeman and Feeney 2011). For example, Feeney and Rainey (2010, 801) use "survey data from managerial-level respondents in state government and nonprofit organizations in Georgia and Illinois, [and compare] perceptions of red tape and personnel rule constraints in public and nonprofit organizations," while Feeney (2012, 427) uses "data from a 2010 national survey of 2,500 local government managers in the United States to test three variations of the Organizational Red Tape scale, investigating whether there is variation in perceived organizational red tape based on the question wording."

Rules and formalization are collocated as possible causes of red tape. An important distinction, however, is that in academia these concepts often relate to written rules at the level of public organizations, rather than the government regulations, bills, and acts that are referenced in Congressional Records. For example, Kaufmann and Feeney (2012, 1200) argue that "there is a strong theoretical argument for expecting a positive relationship between formalization and red tape perceptions." Furthermore, Borry (2016, 585; quoting Bozeman and Feeney 2011) notes that "the amount of rules is formalization, and the level of formalization and the rule mass may tell us little or nothing about the amount of red tape," while Feeney and Boardman (2011, 679) "are concerned with the relationship between organizational confidence and perceptions of organizational rules and procedures as burdensome red tape in the workplace."

We also find evidence that perceptions matter in academic red tape research (perceptions, perceived). In this light, some existing red tape studies reflect explicitly on the objective or subjective nature of red tape (e.g., Kaufmann and Feeney 2014; Kaufmann, Borry, and DeHart-Davis 2019; Pandey and Scott 2002). To illustrate, Kaufmann and Feeney (2012, 1195) find that "red tape perceptions are related to perceptions of formalization. Second, we find that perceived formalization is weakly, significantly related to objective measures of formalization but that objective formalization measures do not correspond to higher levels of red tape perceptions." Similarly, Feeney and Bozeman (2009, 713) argue that "[since] government agencies generally have higher levels of perceived red tape and objectively measured red tape, we expect that the stakeholder organizations (consultants) will perceive lower levels of red tape in their firms compared to the perceptions of organizational red tape among government employees." Note that this distinction between objective and subjective red tape dimensions does not appear in our analysis of Congressional Records or newspaper articles.

In conclusion, the academic literature has mostly focused on red tape at the level of public organizations, and linked organizational red tape to organizational rules. Far less attention has been paid to salient topics discussed in Congressional Records and newspaper articles, namely how government rules and regulations cause red tape, how red tape affects businesses and—to a lesser extent—citizens, and how red tape can be reduced. At the same time, part of the academic literature is concerned with disentangling the subjective and objective dimensions of red tape, which is not a salient topic in either Congress or newspapers. The LL scores from table 3 support this conclusion: the most common collocations of red tape in academic research are all far less common in Congressional Records and newspaper articles.

Moving Forward: A Red Tape Research Agenda

Based on our collocation analysis results, some of the most salient research questions for the red tape literature are the following: How does red tape affect different societal stakeholders? How do government rules and regulations create red tape? How can red tape be reduced? And how can objective and subjective dimensions of red tape be disentangled? Scholars can make a meaningful contribution to society by answering these questions. Notably, a better understanding of what red tape is and how it can be reduced implies substantial efficiency and legitimacy gains. Scarce resources that are now being wasted by governments, businesses, and citizens alike due to the red tape burden can be put to better use if red tape is cut. Similarly, trust in government will likely improve if stakeholders perceive government rules and regulations as less burdensome.

In line with the notion of methodological pluralism, we envision different methodological paths along which the red tape literature can progress to answer the abovementioned questions. First, the level of analysis in red tape research needs to be expanded. Most existing red tape research has conceptualized and operationalized red tape at the level of public organizations. This focus has improved clarity of the red tape concept for academic research purposes (Bozeman 2012), but also means that other stakeholders are largely ignored. Based on our analysis, it is mostly businesses that are (allegedly) tangled in red tape. Furthermore, there is some evidence to suggest that citizens are also burdened by red tape. While there is almost certainly an element of rhetoric to red tape complaints from these stakeholder groups, more research is required to understand how businesses and citizens are affected by red tape.

A limited number of studies have already started to look at how red tape affects citizens. Using survey data on public, private, and nonprofit organizations, Kaufmann, Taggart, and Bozeman (2019) find that administrative delays within the organization make it more difficult to serve clients. In a different setting, Tummers et al. (2016) use a survey experiment to show that an inefficient procedure negatively affects citizen satisfaction. Other promising examples of citizen-based research on rules and regulations can be found in the nascent administrative burden literature, which deals with "an individual's experience of policy implementation as onerous" (Burden et al. 2012, 741). In this light, Herd et al. (2013) find that take-up of Medicaid in the state of Wisconsin could be increased by reducing administrative burden for citizens, while Heinrich (2016) shows that administrative burden created by rules and requirements of the South African Child Support Grant can result in the loss of benefits for eligible citizens.

A business-centric or citizen-centric perspective can be incorporated into existing experimental and survey designs by having citizens or businesspeople, rather than public employees, rate the red tape content of particular rules and procedures. Furthermore, policy initiatives aimed at cutting red tape for citizens and businesses at the supranational and national level usually focus on specific rules and regulations that entail high red tape levels. For example, over 130 specific initiatives for cutting red tape have been proposed by the European Commission in recent years as part of their better regulation agenda (European Commission 2017). These and similar initiatives can serve as a starting point for academic research on burdensome rules that affect businesses and citizens, rather than public managers.

Second, red tape scholars need to more explicitly consider government rules and regulations as a cause of red tape. As evidenced by our findings for Congress and newspapers, bureaucracy in general, and different levels of government in particular, are some of the most common collocates of red tape. Yet, it is unclear if these collocates relate to excessive paperwork, bureaucratic rule-breeding, unnecessary and overlapping regulations, or a combination thereof (Bozeman and Feeney 2011; Kaufmann and van Witteloostuijn 2018). Hence, red tape scholars should explore how government rules and regulations affect red tape, moving beyond existing research that is mostly limited to understanding the relationship between organizational formalization and organizational red tape.

One research strategy that seems particularly well suited for identifying the relationships between government rules and regulations, on the one hand, and red tape, on the other hand, is the case study. Existing red tape case settings include the implementation of Title V of the 1990 Clean Air Act Amendments (Bozeman and DeHart-Davis 1999), government response to Hurricane Katrina (Moynihan 2012), and the Stanford Yacht scandal (Bozeman and Anderson 2016). While insightful in their own right, these studies do not explicitly address the multifaceted nature of regulation, nor do they focus on businesses or citizens in particular. Exploratory case study designs that focus on rules and regulations within a certain policy domain and include a multitude of relevant stakeholders can overcome this limitation.

Third, a greater emphasis on cutting red tape is required. Many academic red tape studies have focused on conceptualizing and measuring red tape (e.g., Borry 2016), or looked at the correlation between red tape and other concepts such as satisfaction (e.g., Kaufmann and Tummers 2017). Problematically, these studies do not directly address the main question underlying the red tape debate in Congress and newspapers, which is: How can red tape be reduced? Answering this question requires innovative cost-benefit analyses (Bozeman 2012), laboratory experiments, and field experiments in which different procedures or different versions of the same procedure are compared on their red tape content, as well as salient outcomes (e.g., performance, or certain public values).

Fourth, more attention needs to be paid to disentangling the objective and subjective dimensions of red tape. This is one area where existing academic research offers important insights beyond red tape discussions in Congress and newspapers. To illustrate, Hattke, Hensel, and Kalucza (2020, 53) note that "negative emotions may cause misperceptions of functional bureaucratic rules as dysfunctional red tape, increasing the likelihood of decision bias." Disentangling objective and subjective red tape dimensions seems particularly relevant in the context of cutting red tape. For example, if studies show that the extent of government rules and regulations is an important red tape driver, then regulatory instruments such as prespecified repeal dates (sunset clauses) can be a useful strategy. Alternatively, red tape may also be driven by a lack of communication towards rule stakeholders about the purpose of burdensome rules, or a perceived lack of stakeholder involvement in the development thereof. In this case, research from the transparency literature (e.g., De Fine Licht et al. 2014) suggests that being transparent about the functional object of a rule, as well as its development process, could reduce perceived red tape without changing any of the underlying written rules. Much more research is required to better understand the interplay between objective and subjective red tape dimensions.

Conclusion

Many critics point out that the field of public administration is increasingly lacking legitimacy because of a lack of relevance and underdeveloped research methods. In this study, we put forward a collocation analysis approach that enables (public administration) scholars to reflect on the meaning of focal concepts by analyzing large sets of written documents. In turn, the findings from collocation analysis can help outline a research agenda that is conducive to methodological pluralism. The collocation analysis approach was illustrated by comparing the meaning of one of public administration's homegrown research topics, red tape, across academia, policy-making, and the media.

In a nutshell, we find that existing academic research focuses on pathological formalization in public organizations. By contrast, discussions of red tape in Congress and newspapers are mostly concerned with government rules and regulations as a cause of red tape for businesses and, to a lesser extent, citizens. Furthermore, while policy-makers and media often talk about cutting red tape, this topic is not reflected in academic research. Finally, the distinction between objective and subjective red tape dimensions that is present in academic research is largely absent in Congressional records and newspaper articles.

In general, we view this result as offering evidence that the fundamental mental maps of scientists and other stakeholders as represented by their repeated, joint use of specific terms around a central concept (Mollin 2009) are different. When seeking answers to the specific research questions discussed above, the academic red tape community also needs to more carefully consider the broader challenges facing the field. This means, at the very least, that public administration scholars need to adhere closely to the principles of transparency, consistency, and replicability when conducting and reporting their research, so as to improve the credibility of research findings. Red tape also lends itself well for more comparative research. In this light, Kaufmann, Hooghiemstra, and Feeney (2018) show that certain formal and informal institutions at the country-level affect perceived red tape. This suggests that further work investigating differences in such perceptions may stand to gain by further adding geographical considerations (Haans and van Witteloostuijn 2019). In addition, journal editors may stimulate authors to submit empirical results from at least two different cultural contexts, or to invite submissions replicating existing work from one cultural context in a different cultural setting.

The current study also has a number of limitations. First, we have used a single method of automated content analysis. Other methods, such as topic modeling or dictionary methods are becoming increasingly popular in fields such as organization studies. While a detailed discussion of the drawbacks and advantages of various methods is beyond the scope of this study (for more on this topic, see Hollibaugh 2019, and Walker et al. 2019), we have focused on collocation analysis here as it is a relatively straightforward method that does not rely on strong assumptions. In contrast, machine learning-based approaches such as topic modeling have increasingly become "black-boxed" (Hannigan et al. 2019, 587) due to their complexity while also relying on rather strong assumptions about language. In addition, by focusing on predefined concepts, rather than identifying the structure of whole corpora in terms of their overall topics, collocation analysis strikes a good balance between being deductive (working from theoretically informed constructs) and being inductive (allowing collocation patterns to emerge from the data). This increases the applicability of collocation analysis when compared with purely inductive or deductive approaches.

Second, our analysis consists of quantitative and qualitative dimensions. While the descriptive statistics of our collocation analysis are generated by our algorithm, the underlying themes to which these collocations belong are interpreted by the researchers themselves. This interpretation, as well as their implications, ensures that research findings are placed within their logical context, but come at the cost of a certain degree of subjectivity. In other words, the tasks and importance of the viewpoints and knowledge of the researchers—themselves—is not to be under-stated. A third limitation relates to our relatively narrow analytical scope. For example, our type of analysis could be enriched by including different units of analysis (e.g., between countries, or different political parties) and comparing time periods to track changes over time. Although unreported analyses (available upon request) suggest that the central meaning of red tape has seen limited change over time (in particular in the news and Congress data), more substantial interpretation and analysis of such patterns were outside the scope of our illustration.

While we have illustrated our collocation analysis in a red tape context, we believe that this approach can have implications for public administration research more broadly. In this light, let us consider another homegrown public administration research topic, namely public service motivation (PSM). Although the PSM literature has grown rapidly over the years, there is still much discussion about how PSM research links to practice. Bozeman and Su (2015, 703) note that "PSM exists mostly as a technical term, one not widely known to educated persons not involved with public administration, and therefore it requires greater care in communicating conceptual and operational meanings." It goes without saying that PSM research offers much potential for improving public administration practice. Yet, if practitioners and the public at large seem hardly aware of the term, scholars may need to do a better job of linking their 'technical' research topic to actual problems faced by practitioners. We suggest that collocation analysis may be a particularly useful tool to accomplish this.

We also see opportunities in combining collocation analysis with alternative approaches to analyzing textual data—consistent with the increasing call for methodological pluralism in the field. For example, one can analyze the excerpts and keywords in the direct context of the focal term using sentiment analysis (Pang and Lee 2008) to investigate whether the tone surrounding important public administration concepts differs across domains. Indeed, one can see tentative evidence of tonal differences around red tape in our sample excerpts. Likewise, topic modeling analyses can offer a useful starting point in identifying shared topics between different corpora, which collocation analysis can then zoom into to investigate differences in meaning. Furthermore, given that collocation analysis fundamentally takes a networked approach to language (seeing collocation as an instance of a tie between words), one could for example compare how central in the language network different concepts of interest are in different corpora to obtain novel insights about their use and meaning.

More generally, we see the patterns that we have identified in our own analyses and that we suspect are present for related public administration concepts as consistent with the "two communities" argument (Newman, Cherney, and Head 2016). Of course, other recent work has also identified evidence in line with such a gap. However, our approach offers a new viewpoint on the problem: a common claim is that academics focus too extensively on rigor and methodological advances while practitioners more on easily processable knowledge (Landry, Lamari, and Amara 2003), but we find that the two have entirely different foci even when looking at the same underlying topic. Put differently, what we find is not so much a matter of being on different ends of the rigor-relevance spectrum, nor of narrow versus wide focus (as found by Walker et al. 2019), but a matter of looking in completely different directions.

We do see a number of ways forward to correct these different viewpoints. Specifically, we anticipate that a greater focus on active engagement with important stakeholders will offer a much better understanding of how and why their perspectives are different, and how the field may adapt to better accommodate these in research. This means moving beyond the field's "obsession with the practitioner" and "going back to the public" (Nisar 2020, 56). This may call for researchers to move outside of their comfort zones by relying on alternative methodologies and actively engaging with stakeholders such as businesses and citizens, generating deeper understanding of these domains via case studies and ethnographic work, and conducting transdisciplinary work with areas that have extensively studied these and other domains. For example, a novel research stream on red tape for businesses requires the public administration field as a whole to engage in shared work with business administration and entrepreneurship scholars.

Supplementary Material

Supplementary data are available at *Journal of Public Administration Research and Theory* online.

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